Amendments to the Claims:

This listing will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A method of controlling an effective coefficient of friction between a first surface of a first element and a second surface of a second element, the method comprising the steps of:

a. configuring the first and second surfaces to be in slidable contact with one another

along an interface of a contact pad surface between the first surface and the second surface and under a force sufficient to maintain contact and having a static friction therebetween wherein the contact pad is positioned at an anti-nodal region of the first surface; and

b. inducing a repetitive motion in resonance in the first surface parallel to the interface thereby altering the effective coefficient of friction along the contact pad surface.

2. (Currently Amended) A method of controlling an effective coefficient of friction between a first surface of a first element and a second surface of a second element, the method comprising the steps of:

a. configuring the first and second surfaces to be in slidable contact with one another

along an interface of a contact pad surface between the first surface and the second surface and under a force sufficient to maintain contact and having a static friction therebetween wherein the contact pad is positioned at an anti-nodal region of the first surface;[[;]] and

b. inducing a symmetrical motion in resonance in the first surface parallel to the interface thereby altering the effective coefficient of friction along the contact pad surface.

3. (Original) The method according to claim 2 wherein the first element comprises a set of dimensions, the method further comprising the step of varying a desired dimension of the first element in response to an electronic signal.

4. (Original) The method as claimed in claim 3 wherein the step of varying the desired dimension further comprises providing a transducer having the set of dimensions, the transducer converting the electronic signal into microscopic mechanical displacements to generate the

symmetrical motion.

5. (Original) The method according to claim 4 further comprising generating the electronic signal at a predetermined frequency which in turn varies the desired dimension at a corresponding velocity.

6. (Original) The method as claimed in claim 5 further comprising the step of amplifying the mechanical displacements.

7. (Original) The method as claimed in claim 6 wherein the step of amplifying further comprises producing a resonance in the transducer to amplify the mechanical displacements by an amplification factor proportional to a quality factor.

8. (Original) The method as claimed in claim 7 wherein the step of producing the resonance further comprises the steps of:

   a. determining a longitudinal acoustic resonant frequency of the transducer along the desired dimension; and
   b. generating a frequency of motion in the transducer substantially equal to the resonant frequency.

9. (Original) The method as claimed in claim 5 further comprising the step of providing at least one extension member having an extension member body, the body being attached to the transducer.

10. (Original) The method as claimed in claim 9 further comprising the step of transferring the mechanical displacements to the extension member body.

11. (Original) The method as claimed in claim 10 further comprising the step of making the corresponding velocity proportional to a gain factor of the extension member body.

12. (Original) The method as claimed in claim 2 further comprising the step of temporally nulling a plurality of frictional forces generated by the symmetrical motion along the interface for at least one oscillation cycle by:

   a. maintaining the force to be constant for the cycle;
   b. adapting the surfaces to have an actual coefficient of friction substantially uniform along any slidable path; and
   c. providing the second element with a substantially large inertial mass.

13. (Original) The method as claimed in claim 2 further comprising the step of spatially nulling a plurality of frictional forces generated by the symmetrical motion along the interface by selecting the interface such that at least one frictional force from a region within the interface is opposed by at least one substantially equal and opposite frictional force from another region within the interface.

14. (Original) The method as claimed in claim 2 further comprising the step of reducing an actual coefficient of friction between the first and second surfaces.

15. (Original) The method as claimed in claim 14 wherein the step of reducing the actual coefficient of friction further comprises adding a lubricant between the first and the second surfaces.

16. (Original) The method as claimed in claim 14 wherein the step of reducing the actual coefficient of friction further comprises applying a thin film of material of a predetermined thickness to at least one of the surfaces.

17. (Original) The method as claimed in claim 16 further comprising the step of modifying the thin film by ion implantation of a predetermined number of ions/cm^2.

18. (Original) The method as claimed in claim 2 further comprising the step of minimizing bonding between the first and the second surface.

19. (Original) The method as claimed in claim 18 wherein the step of minimizing the bonding further comprises:

a. polishing at least one surface to a predetermined degree of flatness per unit area;
b. texturing at least one surface to form a series of microscopic recesses in accordance with a controlled and reproducible pattern; and
c. coating at least one surface with an anti-bonding film.

20. (Original) The method as claimed in claim 18 wherein the step of minimizing the bonding further comprises:

a. limiting a contact pressure between the first and the second surface to be less than 1 MPa;
b. controlling each sliding surface to have a temperature between 00 C and 500 C;
c. generating a frequency of the symmetrical motion of the first element in a range between 0 kHz and 120 kHz; and
d. selecting the frequency of the symmetrical motion to be a longitudinal acoustic

resonant frequency of the first element.

21. (Original) The method as claimed in claim 18 wherein the step of minimizing the bonding further comprises:

a. selecting a melting temperature of a surface material for each of the surfaces to be substantially greater than 1000 C;
b. selecting a crystalline structure of the first surface to be substantially different than a crystalline structure of the second surface; and
c. selecting a thermal conductivity value of at least one surface to be large.

22. (Original) The method as claimed in claim 2 further comprising the steps of:

a. determining a root-mean-square velocity of the symmetrical motion of the first element as a function along the first surface;
b. determining a maximum root-mean-square velocity of the motion of the first element along the first surface; and
c. selecting a plurality of points in the first surface having the root-mean-square velocity within a predetermined percentage of the maximum root-mean-square velocity such that the selected points are configured to be in slidable contact with the second surface along the interface.

23. (Original) The method as claimed in claim 2 further comprising the step of initiating a sliding force to at least one element such that the first element and second element move at a translational speed relative to one another.

24. (Original) The method as claimed in claim 23 further comprising the step of controlling a root-mean-square velocity of the symmetrical motion in the first element to be greater than the translational speed between the elements.

25. (Original) The method as claimed in claim 2 further comprising the step of controlling a cross section of the first element to a predetermined specification.

26. (Original) The method as claimed in claim 2 further comprising the steps of

a. changing the force;
b. generating a signal representing the change in force wherein the signal is applied to a feedback mechanism; and
c. controlling a cross section of the first element in response to the signal from the feedback mechanism.

27. (Original) The method as claimed in claim 22 further comprising adapting one or more contact members to the first element at the selected points wherein the contact member is in slidable contact with the second surface along the interface.

28 - 142. (Cancelled)

143. (Previously Presented) A method of controlling an effective coefficient of friction between a first surface of a first element and a second surface of a second element, the method comprising the steps of:

a. configuring the first and second surfaces to be in slidable contact with one another along an interface between the first surface and the second surface, wherein the interface is located only along an anti-nodal region of the first element, the first and second surfaces under a force sufficient to maintain contact at the interface and having a static friction therebetween; and

b. inducing a repetitive motion in resonance in the first surface parallel to the interface thereby altering the effective coefficient of friction.

144. (Currently Amended) A method of controlling an effective coefficient of friction between a first surface of a first element and a second surface of a second element, the method comprising the steps of:

a. inducing a repetitive motion in resonance in the first surface parallel to an interface thereby altering the effective coefficient of friction; <u>and,</u>

b. configuring the first and second surfaces to be in slidable contact with one another along an anti-nodal region of the interface wherein the first surface protrudes from the first element an appropriate distance such that no motion perpendicular to the second surface is imparted to the second surface.